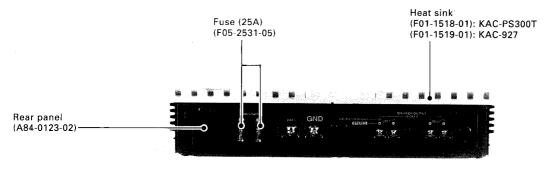
POWER AMPLIFIER

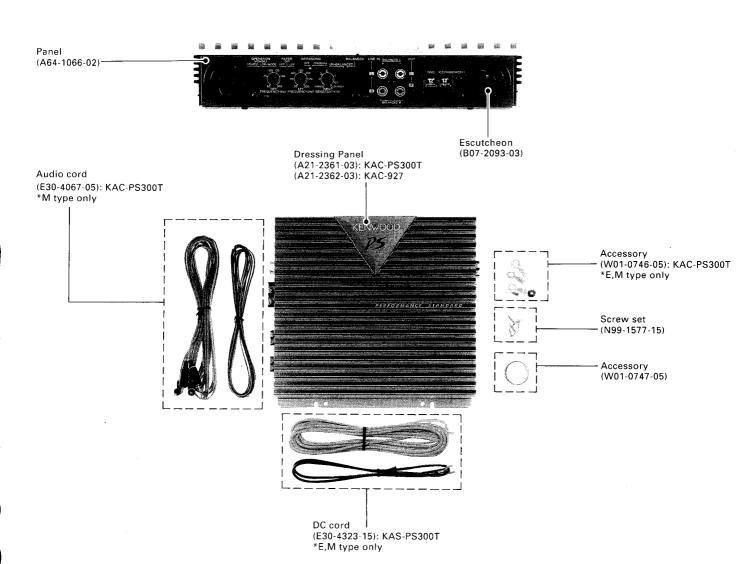
KAC-PS300T/927 SERVICE MANUAL

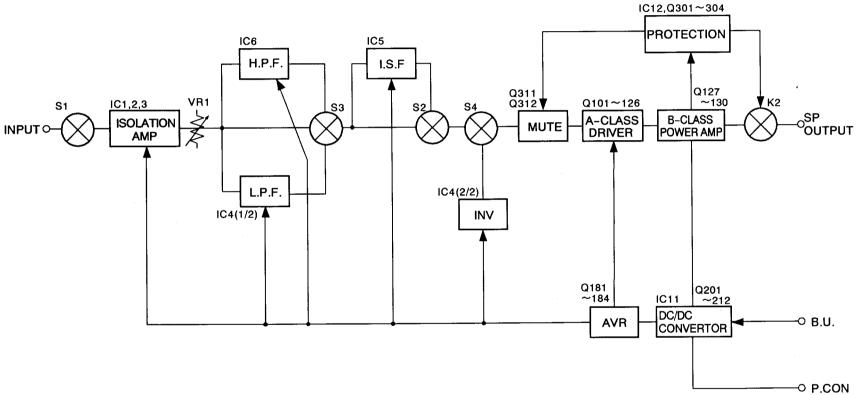
KENWOOD

©1997-2 PRINTED IN JAPAN B51-7137-00 (MC) 3620

Photo is KAC-PS300T







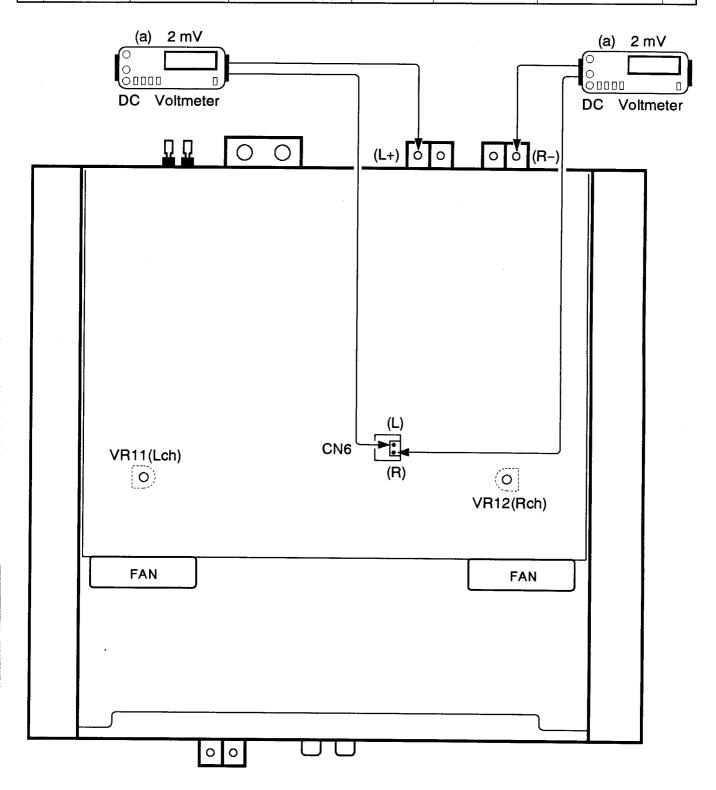
CIRCUIT DESCRIPTION

AUDIO UNIT (X09-5200-10)

| Component | Component Name | Application / Functions | Operation/Condition/Compatibility |
|------------|----------------|----------------------------|---|
| IC1 - 3 | NJM5532D | Isolation AMP | Isolate the vehicle noise penetrating in the amplifier input |
| IC4 | NJM4565D | L.P.F inverter | Inverter for L.P.F and bridge |
| IC5 | NJM4565D | I.S.F | Infra-Sonic Filter (for cutting unnecessary low frequencies) |
| IC6 | NJM4565D | H.P.F | |
| IC11 | UPC494C | Switching regulator | Oscillator for DC/DC converter |
| IC12 | UPC1237HA | Protection IC | Detection of excessive load, DC offset and P-con |
| Q1,2 | 2SA1561 | LED driver | Drives the illumination LEDs |
| Q5 | 2SC3940A(R,S) | Fan drive | Transistor for driving the fan |
| Q7 | 2SC945(A)(Q,P) | P-con detection | Transistor for detecting the P-con voltage |
| Q8 | 2SC945(A)(Q,P) | Over-voltage detection | Detects excessive voltage and turns the AMP off |
| Q101 - 104 | 2SC945(A)(Q,P) | Input differential | |
| Q105 - 108 | 2SA992(F,E) | 2nd-stage differential AMP | |
| Q109 - 112 | | 3rd-stage differential AMP | |
| Q113,114 | 2SC2631(Q,R) | Cascade stage | |
| Q115, 116 | 2SA1123(Q,R) | Current mirror | |
| Q117, 118 | 2SC2590(Q,R) | Temperature compensation | |
| Q119 - 122 | 2SC2235 | | |
| Q123 - 126 | 2SA765 | Power AMP driver | |
| Q181 , 183 | 2SC3940A(R,S) | AVR | +20V constant valtage |
| Q182 , 184 | 2SA1534A(R,S) | AVN | ±20V constant voltage |
| Q127 , 128 | 2SC4886*5 | Power stage | |
| Q129 , 130 | 2SA1860*5 | | |
| Q201 - 208 | | Switching power stage | |
| Q209, 210 | 2SC945(A)(Q,P) | Switching driver | Drives the IC11 switching signal |
| Q211, 212 | 25A/33(A)(Q,P) | | Drives the 1011 switching signal |
| Q301,302 | | Current detection | Detects excessive current and drives Q304 |
| Q303 | 2SA992(F,E) | Relay driver | Detects ON/OFF at IC12 pin-6 and drives the relay |
| Q304 | 2SA992(F,E) | IC12 pin-1 driver | Detects ON/OFF of Q301 and Q302, drives IC12 pin-1 |
| Q306 | 2SA1534A(R,S) | Power switch | Supplies power to IC11 |
| Q308 | DTC124ESA | Muting driver | Detects the voltage at IC12 pin-6 and turns Q311 and |
| Q309 | DTA124ESA | widing driver | Q312 ON/OFF |
| Q311 , 312 | 2SC945(A)(Q,P) | Input muting | Operates more quickly than the amplifier ON/OFF to protect the relay contacts |

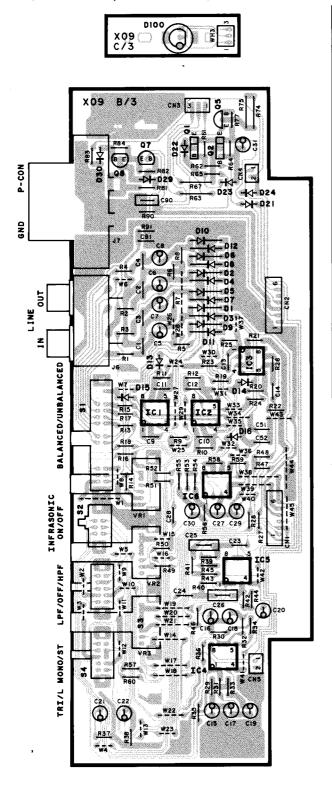
KAC-PS300T/927 ADJUSTMENT

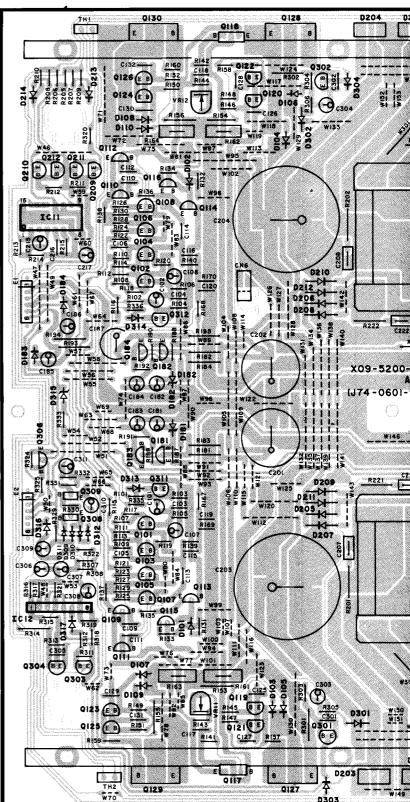
| No. | ITEM | INPUT SETTINGS eceiver or other. | OUTPUT TUNER DETTINGS (RECEIVER) | | ALIGNMENT POINTS | ALIGN FOR | FIG. |
|-----|-----------------|----------------------------------|---|------------|---------------------|--------------------------------------|------|
| 1 | IDLE CURRENT | — | Connect a DC voltmeter to CN6(L,R) and SP-OUT(L,R). | Volume : 0 | VR11(L) VR12(R) | After sufficient aging adjust to 2mV | (a) |

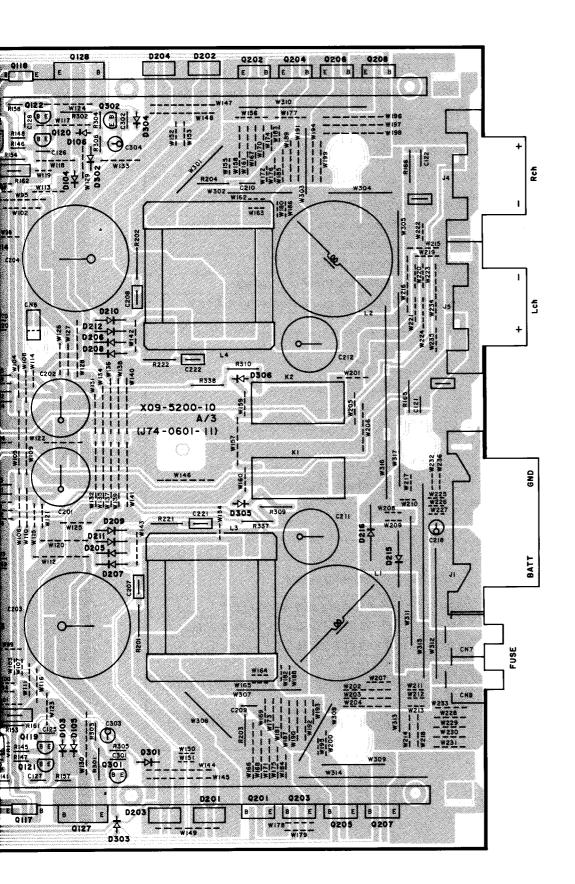


PC BOARD (Component side view)

AUDIO UNIT (X09-5200-10)



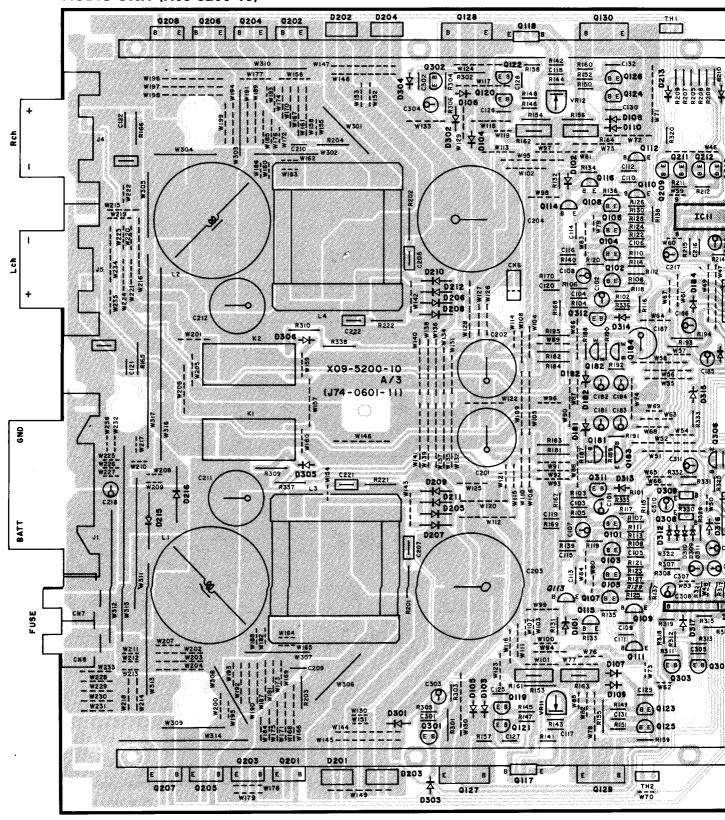


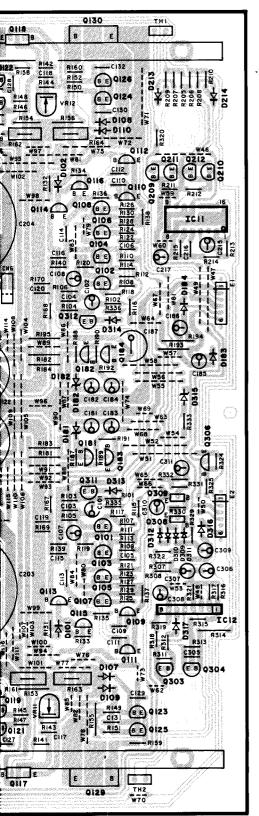


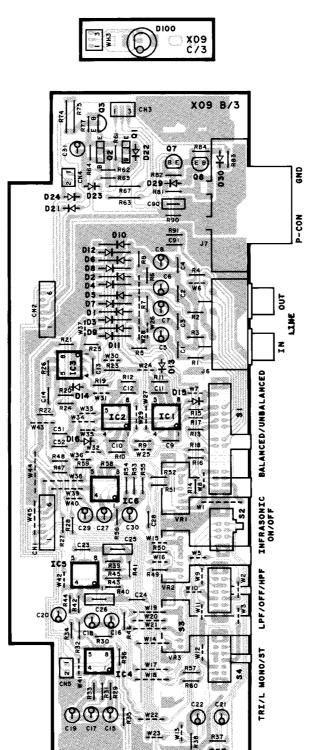
| Ref No. | Adress | | Ref No. | Adress |
|---------|--------|---|---------|--------|
| IC1 | 4B | | Q122 | 2E |
| IC2 | 4B | | Q123 | 6D |
| IC3 | 4C | | Q124 | 2D |
| IC4 | 6C | | Q125 | 6D |
| IC5 | 5C | | Q126 | 2D |
| IC6 | 4B | | Q127 | 6E |
| IC11 | 3D | | Q128 | 1E |
| IC12 | 5D | | Q129 | 6D |
| Q1 | 2B | | Q130 | 1D |
| Q2 | 2B | | Q181 | 4D |
| Q5 | 2B | | Q182 | 3D |
| Q7 | 2B | | Q183 | 4D |
| Q8 | 2B | ' | Q184 | 3D |
| Q101 | 5D | | Q201 | 6F |
| Q102 | 3D | | Q202 | 2F |
| Q103 | 5D | | Q203 | 6F |
| Q104 | 3D | | Q204 | 2F |
| Q105 | 5D | | Q205 | 6G |
| Q106 | 3D | | Q206 | 2G |
| Q107 | 5D | | Q207 | 6G |
| Q108 | 3D | | Q208 | 2G |
| Q109 | 5D | | Q209 | 2D |
| Q110 | 2D | | Q210 | 2C |
| Q111 | 5D | | Q211 | 2D |
| Q112 | 2D | | Q212 | 2D |
| Q113 | 5D | | Q301 | 6E |
| Q114 | 2D | | Q302 | 6D |
| Q115 | 5D | | O303 | 6D |
| Q116 | 2D | | Q304 | 6D |
| Q117 | 6E | | Q306 | 4D |
| Q118 | 1E | | O308 | 5D |
| Q119 | 6E | | Q309 | 4D |
| Q120 | 2E | | Q311 | 4D |
| Q121 | 6E | | Q312 | 3D |
| | | | | |

PC BOARD (Foil side view)

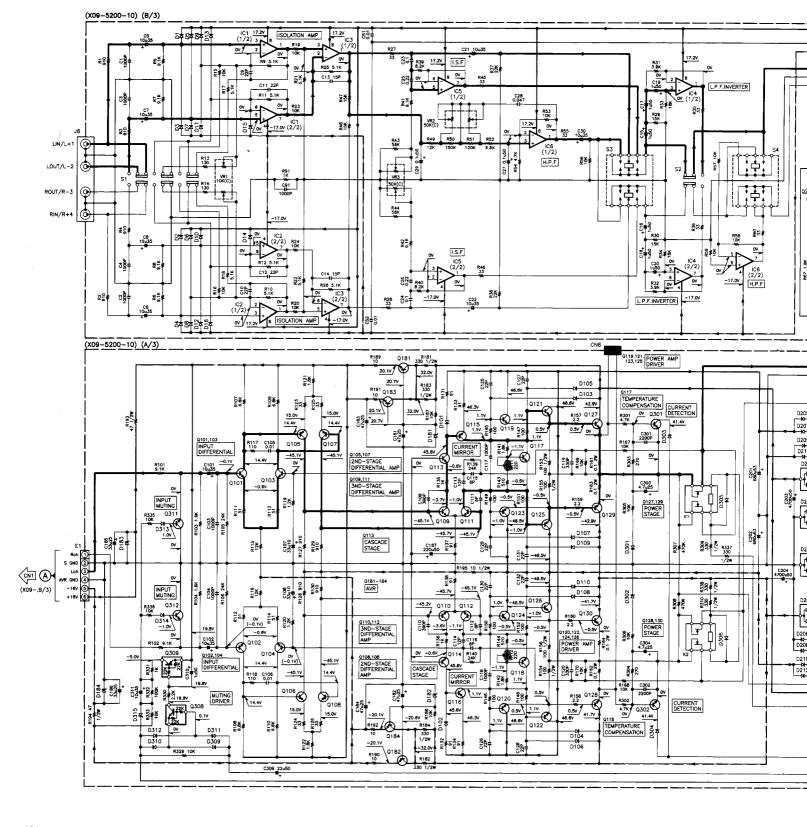
AUDIO UNIT (X09-5200-10)







| Ref No. | Adress | | Ref No. | Adress |
|---------|--------|---|---------|------------|
| IC1 | 40 | | Q122 | 2N |
| IC2 | 40 | | Q123 | 60 |
| IC3 | 4Q | | Q124 | 20 |
| IC4 | 6Q | | Q125 | 60 |
| IC5 | 5Q | | Q126 | 20 |
| IC6 | 4Q | | Q127 | 6N |
| IC11 | 3P | | Q128 | 1N |
| IC12 | 5P | | Q129 | 60 |
| Q1 | 2Q | | Q130 | 10 |
| Ω2 | 2Q | | Q181 | 40 |
| Q5 | 2Q | | Q182 | 40 |
| Ω7 | 20 | | Q183 | 40 |
| Ω8 | 2Q | | Q184 | 30 |
| Q101 | 50 | | Q201 | 6M |
| Q102 | 30 | | Q202 | 1 M |
| Q103 | 50 | | Q203 | 6M |
| Q104 | 30 | | Q204 | 1M |
| Q105 | 50 | | Q205 | 6L |
| Q106 | 30 | | Q206 | 1L |
| Q107 | 50 | | Q207 | 6L |
| Q108 | 20 | | Q208 | 1L |
| Q109 | 50 | | Q209 | 20 |
| Q110 | 20 | | Q210 | 2P |
| Q111 | 60 | | Q211 | 20 |
| Q112 | 20 | | Q212 | 2 P |
| Q113 | 50 | | Q301 | 6N |
| Q114 | 30 | | Q302 | 2N |
| Q115 | 50 | | Q303 | 60 |
| Q116 | 20 | | Q304 | 6P |
| Q117 | 6N | | Q306 | 4P |
| Q118 | 1N | | Q308 | 50 |
| Q119 | 6N | | Q309 | 50 |
| Q120 | 2N | | `Q311 | 40 |
| Q121 | 6N | | Q312 | 30 |
| | • | • | | |









2SA1561



UPC1237HA

NJM4565D NJM5532D UPC494C



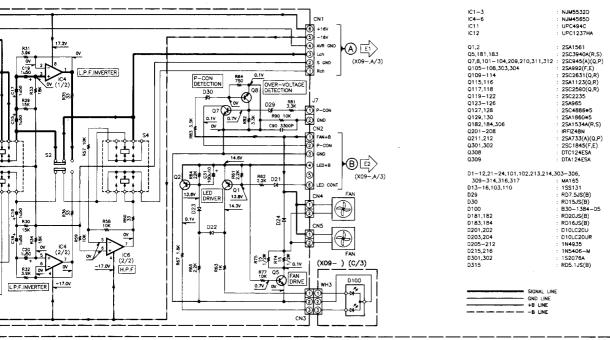


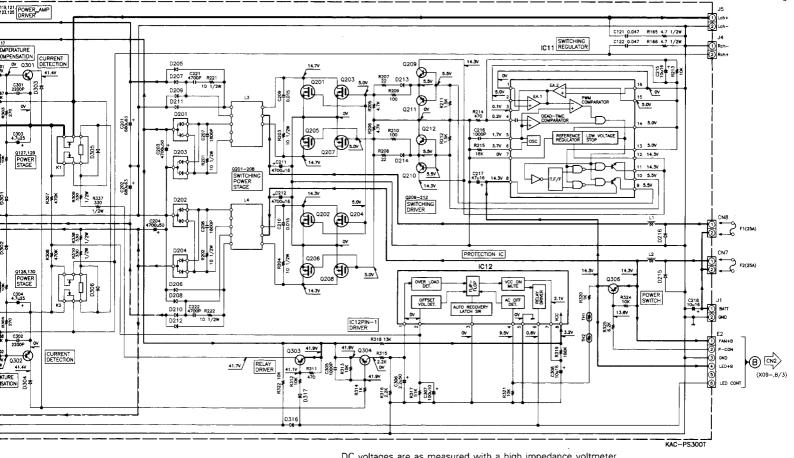












DC voltages are as measured with a high impedance voltmeter. Values may vary slightly due to variations between individual instruments or/and units.

JM4565D UPC494C JM5532D



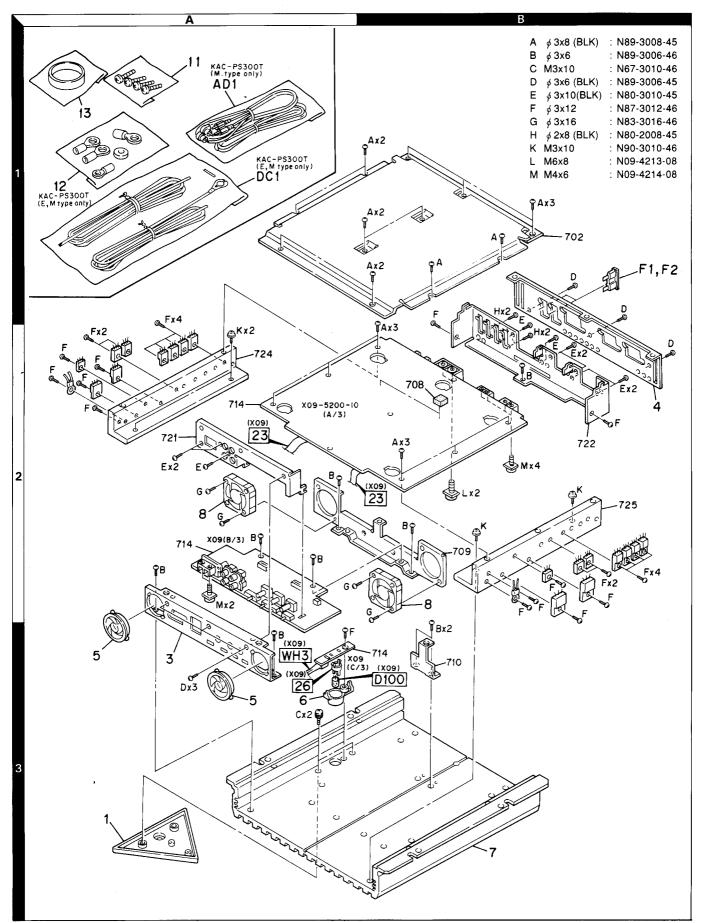


CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). A indicates safety critical components. For continued protection against risk of fire, replace only with same type and rating fuse(s). To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

KAC-PS300T/927



EXPLODED VIEW



PARTS LIST

* New Parts

Parts without Parts No. are not supplied. Les articles non mentionnes dans le Parts No. ne sont pas fournis. Teile ohne Parts No. werden nicht geliefert.

| Ref. No. | Address | | Parts No. | Description | Desti- |
|--|----------------------------|----------------|--|---|---------------|
| 参照書号 | 位置 | Parts # | 第 品 妻 号 | 部 品 名/規 格 | nation 仕 声 |
| | | ··········· | KAC-PS: | 300T/927 | L |
| 1 1 3 4 | 3A 3A 3A 2B | A2 A6 | 21-2361-03 21-2362-03 64-1066-02 64-0123-02 | DRESSING PANEL (KAC-PS300T) DRESSING PANEL (KAC-927) PANEL REAR PANEL | KE1M1 K1 |
| 5 6 - - | 3A 3A | B1 B4 B6 | 7-2093-03 9-1094-03 6-0100-50 4-1000-00 4-1001-00 | ESCUTCHEON LIGHTING BOARD WARRANTY CARD INST.MANUAL(E,F,S)(KAC-PS300T) INST.MANUAL(E,F,G,D,I,S,P) | K E1 |
| - | | | 4-1003-00 4-1017-00 | INST.MANUAL(E,F,S)(KAC-PS300T) INST.MANUAL(E,F,S) (KAC-927) | M1 K1 |
| AD1 PO1 | 1A 1A | | 0-4067-05 0-4323-15 | AUDIO CORD DC CORD ASSY | M1 E1M1 |
| 7 7 8 F1 | 38 38 2A 1B | F0 F0 | 1-1518-01 1-1519-01 9-1243-05 5-2531-05 | HEAT SINK (KAC-PS300T) HEAT SINK (KAC-927) FAN FUSE (25A) | KE1M1 K1 |
| - - - - | | H1 H1 H2 | 2-2611-04 2-2612-03 3-1684-14 1-1117-04 5-0336-04 | PACKING FIXTURE PACKING FIXTURE CARTON BOARD PROTECTION SHEET PROTECTION BAG (170X250X0.03) | |
| - | | | 4-0797-03 4-0800-03 | ITEM CARTON CASE (KAC-PS300T) ITEM CARTON CASE (KAC-927) | KE1M1 K1 |
| A B C | 1A 1A 3B 3A 1B | N8 N8 N6 | 9-1577-15 9-3008-45 9-3006-46 7-3010-46 9-3006-45 | SCREW SET BINDING HEAD TAPTITE SCREW BINDING HEAD TAPTITE SCREW PAN HEAD SEMS SCREW BINDING HEAD TAPTITE SCREW | |
| F G K | 3A 2A 2B | N8 | 7-3012-46 3-3016-46 0-3010-46 | BRAZIER HEAD TAPTITE SCREW PAN HEAD TAPTITE SCREW PAN HEAD MACHINE SCREW | |
| 12 13 | 1A 1A | 1 " " | 1-0746-05 1-0747-05 | ACCESSORY ACCESSORY | E1M1 |
| | Α | UDI | O UNIT | (X09-5200-10) | |
| D100 | 38 | B30 | 0-1384-05 | LED(GRN) | |
| C1 -4 C5 -8 C9 -12 C13 ,14 C15 -20 | | CE CC | 45FB1H102K 04DW1V100M 45FSL1H220J 45FCH1H150J 04DW1H010M | CERAMIC 1000PF K ELECTRO 10UF 35WV CERAMIC 22PF J CERAMIC 15PF J ELECTRO 1.0UF 50WV | |
| C21 ,22 C23 ,24 C25 ,26 C27 C28 | | CF CEC | 04DW1V100M 92FV1H104J 92FV1H224J 04DW1H0R1M 92FV1H473J | ELECTRO 10UF 35WV MF-C 0.10UF J MF-C 0.22UF J ELECTRO 0.1UF 50WV MF-C 0.047UF J | |
| C29 C30 C31 C51 ,52 | | CEC | 04DW1HOR1M 04DW1V100M 04DW1A101M 45FF1H103Z | ELECTRO 0.1UF 50WV ELECTRO 10UF 35WV ELECTRO 100UF 10WV CERAMIC 0.010UF Z | |

| Ref. No. | Address | New Parts No. | Description | Desti- nation |
|--|----------------|---|--|------------------|
| 参照番号 | 位置 | 新斯斯里号 | 部 品 名/規 格 | 任 向 |
| C90 C91 C101,102 C103,104 C105,106 | | CF92FV1H332J CF92FV1H102J CE04DW1V100M CK45FB1H102K CF92FV1H103J | MF-C 3300PF J MF-C 1000PF J ELECTR® 10UF 35WV CERAMIC 1000PF K MF-C 0.010UF J | |
| C107,108 C109,110 C111,112 C113,114 C115,116 | | CE04DW1A330M CK45FB1H391K CC45FSL1H060D CC45FSL1H120J CC45FSL1H060D | ELECTR® 33UF 10WV CERAMIC 390PF K CERAMIC 6.0PF D CERAMIC 12PF J CERAMIC 6.0PF D | |
| C117,118 C119,120 C121,122 C125-132 C181-184 | | CF92FV1H102J CC45FSL1H331J CF92FV1H473J CC45FSL1H220J CE04DW1E470M | MF-C 1000PF J CERAMIC 330PF J MF-C 0.047UF J CERAMIC 22PF J ELECTRO 47UF 25WV | |
| C185,186 C187 C201,202 C203,204 C207,208 | | CEO4DW1E330M CEO4DW1H221M C90-2916-05 C90-2920-05 CF92FV1H182J | ELECTRO 33UF 25WV ELECTRO 22OUF 50WV ALMINIUM ELECTROLYTIC C. ALMINIUM ELECTROLYTIC C. MF-C 1800PF J | |
| C209,210 C211,212 C215 C216 C217 | | CF92FV1H153J C90-2919-05 CE04DW1C100M CF92FV1H102J CE04DW1C470M | MF-C 0.015UF J ELECTRO 4700UF 16WV ELECTRO 10UF 16WV MF-C 1000PF J ELECTRO 47UF 16WV | |
| C218 C221,222 C301,302 C303,304 C305 | | CE04DW1C100M CF92FV1H472J CF92FV1H222J CE04DW1E4R7M CF92FV1H102J | ELECTR® 10UF 16WV MF-C 4700PF J MF-C 2200PF J ELECTR® 4.7UF 25WV MF-C 1000PF J | |
| C306 C307 C308 C309 C310 | | CEO4DW1H2R2M CEO4DW1A101M CEO4DW1C100M CEO4DW1H220M CEO4DW1H010M | ELECTRO 2.2UF 50WV ELECTRO 100UF 10WV ELECTRO 10UF 16WV ELECTRO 22UF 50WV ELECTRO 1.0UF 50WV | |
| C311 | | CEO4DW1V100M | ELECTRO 10UF 35WV | |
| 23 CN1 ,2 CN3 CN4 ,5 CN6 | 2A | E31-8220-05 E40-9474-05 E40-3247-05 E40-3246-05 E40-3881-05 | LEAD WIRE FLAT CABLE CONNECTOR PIN ASSY PIN ASSY SOCKET FOR PIN ASSY | |
| J1 J4 ,5 J6 J7 WH3 | | E70-0804-05 E20-0239-05 E63-0804-05 E70-0810-05 E31-8296-15 | SCREW TERMINAL BOARD SCREW TERMINAL BOARD(2P) PHONO JACK SCREW TERMINAL BOARD WIRING HARNESS | |
| 26 CN7 ,8 | 3B | J19-4459-04 J13-0602-05 | LED HOLDER Fuse Holder | |
| L1 ,2 L3 ,4 | | L33-1015-05 L19-0559-05 | CHOKE COIL TRANSFORMER FOR CONVERTER | |
| A E F | 2A 2B 2B | N89-3008-45 N80-3010-45 N87-3012-46 | BINDING HEAD TAPTITE SCREW PAN HEAD TAPTITE SCREW BRAZIER HEAD TAPTITE SCREW | |

E: Europe K: North America M: Other Areas

W: Without Europe

⚠ indicates safety critical components.

PARTS LIST

* New Parts

2

Parts without Parts No. are not supplied.

Les articles non mentionnes dans le Parts No. ne sont pas fournis.

Teile ohne Parts No. werden nicht geliefert.

| Ref. No. | Address | | | Description | Desti- |
|--|----------------|------------|---|---|---------------|
| 参照番号 | 位置 | Parts # | 部品番号 | 部品名/規格 | nation 仕 向 |
| H . L | 2B 2B 2B | | N80-2008-45 N09-4213-08 N09-4214-08 | PAN HEAD TAPTITE SCREW SEMS SEMS | |
| R74 ,75 R153-156 R161-164 R165,166 R181-184 | | | RD14DB2H150J RD14DB2H101J R92-0205-05 RD14DB2H4R7J RD14DB2H331J | SMALL-RD 15 J 1/2W SMALL-RD 100 J 1/2W METAL-PLATE 0.1 K 2W SMALL-RD 4.7 J 1/2W SMALL-RD 330 J 1/2W | |
| R193,194 R195 R201-204 R221,222 R309,310 | | | RD14DB2H470J RD14DB2H100J RD14DB2H100J RD14DB2H100J RD14DB2H331J | SMALL-RD 47 J 1/2W SMALL-RD 10 J 1/2W SMALL-RD 10 J 1/2W SMALL-RD 10 J 1/2W SMALL-RD 330 J 1/2W | |
| R337,338 VR1 VR2 ,3 VR11,12 | | | RD14DB2H331J R31-0214-05 R31-0215-05 R12-0092-05 | SMALL-RD 330 J 1/2W VARIABLE RESISTOR VARIABLE RESISTOR TRIMMING POT.(220) | |
| K1 ,2 S1 S2 S3 ,4 | | | \$76-0804-05 \$62-0853-05 \$62-0842-05 \$31-2630-05 | MAGNETIC RELAY SLIDE SWITCH SLIDE SWITCH SLIDE SWITCH | |
| D1 -12 D13 -16 D21 -24 D29 D30 | | | MA165 1SS131 MA165 RD7.5JS(B) RD15JS(B) | DIODE DIODE DIODE ZENER DIODE ZENER DIODE | |
| D101,102 D103-110 D181,182 D183,184 D201,202 | | | MA165 1SS131 RD20JS(B) RD16JS(B) D10LC20U | DIODE DIODE ZENER DIODE ZENER DIODE DIODE | |
| D203,204 D205-212 D213,214 D215,216 D301,302 | | | D10LC20UR 1N4935 MA165 1N5406-M 1S2076A | DIODE DIODE DIODE DIODE DIODE | |
| D303-306 D309-314 D315 D316,317 IC1 -3 | | | MA165 MA165 RD5.1JS(B) MA165 NJM5532D | DIODE DIODE ZENER DIODE DIODE IC(OP AMP X2) | |
| IC4 -6 IC11 IC12 Q1 ,2 Q5 | | | NJM4565D UPC494C UPC1237HA 2SA1561 2SC3940A(R,S) | IC(OP AMP X2) IC(SWITCHING REGULATOR) IC(POWER AMP) TRANSISTOR TRANSISTOR | |
| Q7 ,8 Q101-104 Q105-108 Q109-114 Q115,116 | | | 2SC945(A)(Q,P) 2SC945(A)(Q,P) 2SA992(F,E) 2SC2631(Q,R) 2SA1123(Q,R) | TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR | |
| Q117,118 Q119-122 Q123-126 | | | 2SC2590(Q,R) 2SC2235 2SA965 | TRANSISTOR TRANSISTOR TRANSISTOR | |

| | esti- ation |
|--|----------------|
| 参照者号 位置 新 部品 著号 部品 名/規格 任 | |
| Q127,128 | |
| Q164 | |
| Q303,304 2SA992(F,E) TRANSISTOR TRAN | |
| TH1 ,2 PTH9M04BE222T POSITIVE RESISTOR | |
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E: Europe K: North America M: Other Areas

W: Without Europe

 $\underline{\Lambda}$ indicates safety critical components.

SPECIFICATIONS

Specifications subject to change without notice.

KAC-PS300T

Audio Section

| Max Power Output (4 Ω) | | |
|---|-------|--------------|
| Normal | 200 | $W \times 2$ |
| Bridged | 800 | $W \times 1$ |
| Rated Power Output (4 Ω) (12 V) | | |
| Normal (20 Hz ~ 20 kHz 0.05 % THD) | . 75 | $W \times 2$ |
| Bridged (1 kHz 0.5 % THD) | 300 | $W \times 1$ |
| Rated Power Output (2 Ω) (12 V) | | |
| Normal (1 kHz, 0.5 % THD) | 150 | $W \times 2$ |
| Rated Power Output (4 Ω) (14.4 V) | | |
| Normal (20 Hz ~ 20 kHz 0.05 % THD) | | |
| DIN: 45324 +B=14.4 V | 100 \ | $W \times 2$ |
| (E type) | | |
| Bridged (1 kHz 0.5 % THD) | 400 \ | $W \times 1$ |
| Rated Power Output (2 Ω) (14.4 V) | | |
| Normal (1 kHz, 0.5 % THD) | 200 \ | $W \times 2$ |
| Frequency Response (+0, -1 dB) 5 H | z ~ 5 | 0 kHz |
| Sensitivity (rated output) (MAX.) | | 0.2 V |
| (MIN.) | | |
| Signal to Noise Ratio | 10 | 05 dB |
| Input Impedance | | |
| Damping Factor (100 Hz) More | | |
| Low Pass Filter Frequency 50 ~ 200 Hz (| | |
| Hi Pass Filter Frequency 50 ~ 200 Hz (| 12 dE | B/oct) |
| | | |

General

| Operating Voltage | 12.0 V (11 ~ 16 V allowable) |
|---------------------|---|
| Current Consumption | 32 A |
| | 272 × 58 × 300 mm |
| (1 | $10-11/16 \times 2-5/16 \times 11 \sim 13/16 \text{ in.}$ |
| Weight | 19 40 19 6 161 |

Specifications subject to change without notice.

KAC-927

Audio Section

| Max Power Output (4 Ω) |
|---|
| Normal 250 W × 2 |
| Bridged 800 W x 1 |
| Rated Power Output (4 Ω) (14.4 V) |
| Normal (20 Hz \sim 20 kHz 0.08 % THD) |
| Bridged (1 kHz 0.8 % THD) |
| Rated Power Output (2 Ω) (14.4 V) |
| Normal (1 kHz, 0.8 % THD) |
| Frequency Response (+0, -1 dB) 5 Hz ~ 50 kHz |
| Sensitivity (rated output) (MAX.) |
| (MIN.) 5.0 V |
| Signal to Noise Ratio |
| Input Impedance |
| Damping Factor (100 Hz) More than 200 |
| Low Pass Filter Frequency 50 ~ 200 Hz (18 dB/oct) |
| Hi Pass Filter Frequency 50 ~ 200 Hz (12 dB/oct) |
| General |
| Operating Voltage 12.0 V (11 ~ 16 V allowable) |
| Current Consumption |
| Dimensions (W \times H \times D) |
| $(10-11/16 \times 2-5/16 \times 11 \sim 13/16 \text{ in.})$ |
| Weight |
| 5 NG NG (5.5 15) |

KENWOOD CORPORATION

14-6, Dogenzaka 1-chome, Shibuya-ku, Tokyo, 150 Japan

KENWOOD SERVICE CORPORATION

P.O. BOX 22745, 2201 East Dominguez Street, Long Beach, CA 90801-5745 U.S.A.

KENWOOD ELECTRONICS CANADA INC.

6070 Kestrel Road, Mississauga, Ontario, Canada L5T 1S8

KENWOOD ELECTRONICS LATIN AMERICA S.A.

P.O. BOX 55-2791, Piso 6, Plaza Chase, Cl. 47 y, Aquilino de la Guardia, Panama, Republic of Panama

KENWOOD ELECTRONICS BRASIL LTDA.

Avenida Indianópolis, 628, 04062-001 Pianalto Paulista, São Paulo-SP-Brasil

KENWOOD ELECTRONICS UK LIMITED

KENWOOD House, Dwight Road, Watford, Herts, WD1 8EB, United Kingdom

KENWOOD ELECTRONICS DEUTSCHLAND GMBH

Rembrücker-Str. 15, 63150 Heusenstamm, Germany

KENWOOD ELECTRONICS FRANCE S.A.

13, Boulevard Ney, 75018 Paris, France

KENWOOD ELECTRONICS BELGIUM N.V.

Mechelsesteenweg 418, B-1930 Zaventem, Belgium

KENWOOD ELECTRONICS ITALIA S.p.A.

Via G. Sirtori 7/9, 20129 Milano, Italy

KENWOOD IBÉRICA S.A.

Bolivia, 239-08020 Barcelona, Spain

KENWOOD ELECTRONICS AUSTRALIA PTY. LTD.

(A.C.N. 001 499 074)

8 Figtree Drive, Australia Centre, Homebush, N.S.W. 2140, Australia

KENWOOD & LEE ELECTRONICS LTD.

Unit 3712-3724, Level 37, Tower 1, Metroplaza, 223 Hing Fong Road, Kwai Fong, N.T., Hong Kong

KENWOOD ELECTRONICS GULF FZE

P.O. BOX 61318, Jebel Ali, Dubai, U.A.E.

KENWOOD ELECTRONICS (THAILAND) CO.,LTD.

573/111 Soi Ramkhamhaeng 39, Ramkhamhaeng Road, Wangthonglang, Bangkapi, Bangkok, 10310 Thailand

KENWOOD ELECTRONICS SINGAPORE PTE. LTD.

1 Genting Lane,# 07-00, KENWOOD Building Singapore 349544

KENWOOD ELECTRONICS (MALAYSIA) SDN BHD

#4.01 Level 4, Wisma Academy, Lot 4A, Jalan 19/1, 46300 Petaling Jaya, Selangor , Malaysia